

Amendments to the Claims:

All amendments and cancellations to the claims are made without prejudice or disclaimer.  
This listing of claims replaces all prior versions and listings of claims in the application:

Listing of Claims:

1. (currently amended) A bacterial host cell that produces a metabolite, the host cell comprising a nucleic acid sequence comprising a promoter and nucleic acid sequence encoding a biosynthetic enzyme for production of an isoprenoid, a polyketide, or a polyhydroxyalkanoate; the nucleic acid sequence being operably linked to the promoter which is bound by ntrC ; the host cell being genetically modified by deletion or inactivating mutation in *glnL* , wherein the bacterial host cell is an *E. coli* cell.
- 2.-4. (cancelled)
5. (previously presented) The host cell of claim 1 wherein the promoter is *glnAp2*.
- 6.-10. (cancelled)
11. (withdrawn – currently amended) The host cell of claim [[10]] 17 wherein the isoprenoid is a carotenoid.
12. (currently amended) The host cell of claim [[10]] 17 wherein the isoprenoid is lycopene, β-carotene, astaxanthin, or one of their precursors.

13. (currently amended) The host cell of claim [[10]] 17 wherein the ~~first~~ enzyme is isopentenyl diphosphate isomerase, geranylgeranyl diphosphate synthase, or 1-deoxyxylulose 5-phosphate synthase.

14.-16. (cancelled)

17. (currently amended) ~~The host cell of claim 10 An E. coli host cell comprising a first expression cassette comprising a promoter and a nucleic acid sequence encoding an enzyme that catalyzes biosynthesis of an isoprenoid; the nucleic acid sequence being operably linked to the glnAp2 promoter which is regulated by acetyl phosphate in the absence of nitrogen starvation, wherein the cell is lacking a functional gltL histidine protein kinase gene.~~

18.-20. (cancelled)

21. (currently amended) The host cell of claim [[10]] 17 wherein the host cell further contains a nucleic acid sequence encoding a phosphoenolpyruvate synthase.

22. (withdrawn – currently amended) A method of producing a isoprenoid in a host cell, the method comprising:

providing the host cell of claim [[10]] 17, wherein the ~~first~~ enzyme is a biosynthetic enzyme that catalyzes synthesis of the isoprenoid;  
overexpressing a phosphoenolpyruvate synthase; and  
expressing ~~the~~ biosynthetic enzymes ~~required for~~ that catalyzes synthesis of the isoprenoid.

23. (withdrawn – currently amended) A method of producing a lycopene in a bacterial host cell, the method comprising:

providing the host cell of claim [[10]] 17; and

expressing a 1-deoxy-D-xylulose 5-phosphate synthase, a geranylgeranyl diphosphate synthase, a phytoene synthase, and a phytoene desaturase, at least one of which is the first enzyme expressed from the first expression cassette .

24. (currently amended) A kit comprising (i) a nucleic acid sequence containing a promoter bound by ntrC such that the promoter is regulated by acetyl phosphate in a defined bacterial host cell, and a coding sequence that encodes an enzyme for isoprenoid biosynthesis; and (ii) the defined host cell which is an *E. coli* host cell genetically modified by deletion or inactivating mutation of the glnL gene.

25.- 36. (cancelled)

37. (withdrawn) The host cell of claim 1 wherein the heterologous metabolite is a polyketide.

38. (withdrawn) The host cell of claim 1 wherein the heterologous metabolite is a polyhydroxyalkanoate.

39. (cancelled)

40. (currently amended) A ~~E. coli~~ *E. coli* bacterial host cell comprising:

(i) a genetic alteration inactivating the glnL gene; and

(ii) a nucleic acid sequence comprising a coding sequence encoding a biosynthetic enzyme that catalyzes production of an isoprenoid, polyketide, or polyhydroxyalkanoate, and an operably linked promoter that is bound by ntrC and regulated by acetyl phosphate.

41. (previously presented) The host cell of claim 40 wherein the biosynthetic enzyme is isopentenyl diphosphate isomerase, geranylgeranyl diphosphate synthase, 1-deoxyxylulose 5-phosphate synthase, or phosphoenolpyruvate synthase.

42. (cancelled)

43. (cancelled)

44. (cancelled)

45. (currently amended) The kit of claim [[ 42 ]] 24 wherein the promoter is the glnAp2 glnAp2 promoter.

46. (withdrawn) A method of producing a metabolite in a bacterial host cell, the method comprising:

providing the host cell of claim 1; and

culturing the host cell under conditions such that acetyl phosphate triggers the promoter.

47. (withdrawn) The method of claim 46 in which the culturing comprises nitrogen rich conditions.

48. (withdrawn) The method of claim 46 in which the culturing comprises growth to late logarithmic growth.

49. (withdrawn) The method of claim 46 in which the culturing comprises growth to stationary phase.

50. (withdrawn) The method of claim 48 in which the metabolite is lycopene, the promoter is *glnAp2*, and at least 5 mg L<sup>-1</sup> of lycopene are produced.

51. (cancelled)

52. (withdrawn – currently amended) The host cell of claim [[10]] 12 wherein the isoprenoid is lycopene.

53. (new) The host cell of claim 12 wherein the isoprenoid is β-carotene.

54. (new) The host cell of claim 12 wherein the isoprenoid is astaxanthin.

55. (new) The host cell of claim 13 wherein the enzyme is isopentenyl diphosphate isomerase.

56. (new) The host cell of claim 13 wherein the enzyme is geranylgeranyl diphosphate synthase.

57. (new) The host cell of claim 13 wherein the enzyme is 1-deoxyxylulose 5-phosphate synthase.

58. (new) The method of claim 46 wherein the metabolite is a polyketide.

59. (new) The method of claim 46 wherein the metabolite is a polyhydroxyalkanoate.

60. (new) The method of claim 46 in which the promoter is *glnAp2*.

61. (new) The method of claim 47 in which the promoter is *glnAp2*.
62. (new) The method of claim 48 in which the promoter is *glnAp2*.
63. (new) The method of claim 49 in which the promoter is *glnAp2*.
64. (new) The method of claim 49 in which the metabolite is a carotenoid.
65. (new) The method of claim 49 in which the metabolite is lycopene.
66. (new) The method of claim 65 in which the culturing comprises nitrogen rich conditions.
67. (new) The method of claim 65 in which the culturing comprises growth to late logarithmic growth.
68. (new) The method of claim 65 in which the culturing comprises growth to stationary phase.
69. (new) The method of claim 58 in which the culturing comprises nitrogen rich conditions.
70. (new) The method of claim 58 in which the culturing comprises growth to late logarithmic growth.
71. (new) The method of claim 58 in which the culturing comprises growth to stationary phase.

72. (new) The method of claim 59 in which the culturing comprises nitrogen rich conditions.

73. (new) The method of claim 59 in which the culturing comprises growth to late logarithmic growth.

74. (new) The method of claim 59 in which the culturing comprises growth to stationary phase.